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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,004	03/12/2004	Robert A. Gonsalves	RG-3	5175
7590 RICHARD MENELLY PO Box 695 ALFRED, ME 04002		10/30/2007	EXAMINER NGUYEN, LUONG TRUNG	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 10/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/798,004	Applicant(s) GONSALVES, ROBERT A.	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. Claims 4-8 are objected to because of the following informalities:

Claim 4 (lines 4, 8, 10), claim 7 (lines 1-2), "AO device" should be changed to --adaptive optic device--.

Claim 4 (line 5), "said medium" should be changed to --said optical medium--.

Claim 5 (line 5), claim 8 (line 5), "the AO" should be changed to --the adaptive optic device--.

Claim 5 (line 6), claim 8 (lines 6-7), " $W(k)+T(k)$ " should be changed to -- $W(k)+T(k)$ --.

Claim 5 (line 9), "the change" should be changed to --a change--.

Claim 5 (line 19), claim 8 (line 23), "the specification" should be changed to --a specification--.

In claim 5, the "." at the end of lines 4, 5, 7, 8, 12, 17 should be changed to --,--.

Claim 6 (line 2), "said AO device" should be changed to --said adaptive optic device--.

Claim 6 (line 3), " $T(k-1) + D(k)$ (7).]" should be changed to -- $T(k-1) + D(k)$, (7)--.

Claim 7 (lines 9 and 10), "said AO" should be changed to --said adaptive optic device--.

Claim 8 (line 1), "Claim 7wherein said sequence diversity processor" should be changed to --Claim 7 wherein said sequence processor--.

In claim 8, the "." at the end of lines 4, 5, 8, 9, 12, 16 should be changed to --,--.

Claim 8 (line 11), " $T(k) - T(k-1)$ " should be changed to -- $T(k) - T(k-1)$ --.

Claim 8 (line 14), " $W1(k) + T(k)$ " should be changed to -- $W1(k) + T(k)$ --.

Claims 5-6 are objected as being dependent on claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites limitation “means for producing a sequence of digital images of an object,” which corresponds to “detector 5,” which is disposed after adaptive optic 4; and “an adaptive optic device, “ which corresponds to adaptive optic 4.” Figure 1 does not disclose the adaptive optic 4 receives digital images from detector 5, the adaptive optic 4 only receives control signal from sequential diversity processor 7. Figure 1 discloses lens 3 is disposed in front of adaptive optic device 4. Lens 4 does not produce a sequence of digital images of an object.” Therefore, the limitation “means for producing a sequence of digital images of an object, which object is continuously distorted by time-varying aberrations of an optical medium; an adaptive optic device arranged for receiving said sequence of digital images,” as claimed in claim 1, was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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Claim 1 recites limitation “a digital processor connecting with said adaptive optic device for performing real-time control of said adaptive optic device; and a sequential diversity processor connecting with said digital processor for providing real-time control signals to said adaptive optic device to thereby cancel said aberrations.” The specification only disclose an adaptive optic device 4 connected to sequential diversity processor 7 (figure 7). There is no disclosure of a digital processor, which connects to both adaptive optic device and sequential diversity processor as claimed in claim 1.

Claims 2-3 are rejected as being dependent on claim 1.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5-6, 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 (line 18), recites limitation “insert equation (5) into equation (2)”. It is unclear since it is not known what is the equation (5).

Claim 5 (line 9) recites the limitation “the” in “the diversity image”.

Claim 5 (line 10) recites the limitation “the” in “the AO phase”.

Claim 5 (line 12) recites the limitation “the” in “the phase diversity algorithm”.

There is insufficient antecedent basis for this limitation in the claim.

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Claim 6 (line 3) recites equation " $T(k) = T(k-1) + D(k)$ ". It is unclear since it is not known what are $T(k)$, $T(k-1)$, $D(k)$.

Claim 8 (line 21), recites limitation "insert equation (5) into equation (2)". It is unclear since it is not known what is the equation (5).

Claim 8 (line 10) recites the limitation "the" in "the AO phase".

Claim 8 (line 12) recites the limitation "the" in "the phase diversity algorithm".

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 4, 7, 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Love et al. (US 6,107,617).

Regarding claim 4, Love et al. discloses a sequential diversity imaging apparatus comprising:

means for receiving a sequence of images of an object (figure 3, column 3, lines 22-33),
said object being continuously distorted by a changing optical medium;

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an AO device in optical proximity (liquid crystal spatial light modulator 4, figure 3, column 3, line 22 – column 4, line 6) with said receiving means for canceling aberrations introduced by said medium to thereby provide solely adapted in-focus images of said object;

a detector array (CCD camera, figure 3) arranged for receiving said solely adapted in-focus images and producing digital image representations thereof; and

a sequential diversity processor (data processor 6, figures 2-3, column 3, line 22 – column 4, line 6) connecting with said detector array and said AO device, said sequential diversity processor receiving said digital image representations from said detector array and providing sequential control signals to said AO device to enable said AO device to cancel said aberrations.

Regarding claim 7, claim 7 is a method claim of apparatus claim 4. Therefore, claim 7 is rejected for the reasons given in claim 4.

Regarding claim 9, Love et al. discloses wherein said control signals for said AO device are determined according to a predetermined control equation (figures 2-3, computer phase diversity algorithm).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gonsalves et al. (US 4,309,602).

Granger et al. (US 5,300,766).

Clark (US 6,771,422).

Vorontsov et al. (US 6,911,637).

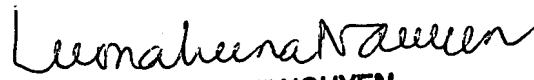
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
10/28/07


LUONG T. NGUYEN
PATENT EXAMINER